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ABSTRACT

Of the 47,000 bilingual pupils enrolled in the Chicago public schools, 39,000 were Spanish speaking. Many of these Spanish speaking students were in special bilingual programs. The success of one of these bilingual programs was evaluated by comparing two groups of Mexican American elementary pupils in the same school. One group was comprised of 14 pupils who attended regular classes. The bilingual group was comprised of 15 pupils whose knowledge of English was extremely weak. The same teachers worked with both groups, each teaching one or more subject areas. The students' grades in eight subjects (reading, math, speaking, listening, writing, spelling, science, and social studies) were analyzed at the beginning and end of one school term. In four areas (speaking, listening, spelling, and science), the mean grade of the regular group was higher at the beginning of the term. However, by the end of the term, the mean grade of the bilingual group exceeded that of the regular group in these same subjects. Data showed that the grades of the bilingual group improved to a greater degree than the grades of the regular group in every subject area. In the regular group, slight or moderate over-all grade increases occurred in three subjects, no change occurred in two subjects, and slight decreases resulted in three subjects. In the bilingual group, grades improved moderately to substantially in all eight subjects. (NQ)

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A COMPARISON OF SCHOLASTIC ACHIEVEMENT OF MEXICAN-AMERICAN PUPILS IN REGULAR AND BILINGUAL GROUPS IN A CHICAGO PUBLIC ELEMENTARY SCHOOL

AUG 1 0 1976

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Research done during 1974-75 school year.

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Nineteen million persons who speak a language other than English as a mother tongue live in the United States. Five million of their children are in our school systems.[1] These children are referred to as bilingual because they are about to begin or are in the process of learning English as a second language.[2] However, bilingual education has not generally been encouraged because it was felt that speaking two languages would retard progress in English - the language considered necessary for socioeconomic success in the United States.[3] In addition, bilingual groups have been considered politically and/or psychologically outside the limits of the mainstream of American life.[4]

Before 1940, attempts to determine or understand the potential of bilingual children in school settings were virtually non-existent. These children were either assumed to be highly non-verbal; to be without the necessary educational and cultural experiences to learn in an English speaking school setting; or to be lacking in basic intelligence.

During the 1940's, however, a more positive approach to the problems of bilingual groups was undertaken. This approach stressed vocabulary items as the fundamental building blocks of language. It required non-English speaking children to build sentences in English without a syntactic framework into which they could put the words they had been learning. In the 1950's the approach changed to a focus on the language system directly, thus teaching

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[1]Robinett, Ralph F., De Todo Un Poco, March 1973 p. 6.

[2]Robinett, p. 7.

[3]Velasquez, C. and Cudecki, E., "Bilingual Education," De Todo Un Poco, March, 1972, pp. 115-118.

[4]Robinett, p. 8.

English as a second or foreign language. Repetition was the cornerstone of this approach and the method has been criticized as being overly repetitious without providing a basic conceptual framework.

In the 1960's, with the development of an increased self consciousness of minority groups and the demand for equal opportunity, a new type of bilingual program emerged. Bilingual education now took the approach that, for the bilingual child, English was not an end in itself, rather English was only one of the many tools - the bilingual learner's mother tongue was another - to be used in the development of basic concepts, skills, and attitudes.[5]

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[5]Robinett, pp. 9-12.

Method

The Chicago public schools enroll 47,000 bilingual pupils of which 39,000 are Spanish speaking.[6] Many of these children are in special bilingual programs. It was the purpose of this paper to attempt to evaluate the success of one of these bilingual programs by comparing two groups of Mexican-American elementary pupils in the same school. One group attended so-called regular classes. The other group - comprised of those pupils whose knowledge of English was extremely weak - attended bilingual classes. The same teachers worked with both groups; each teaching one or more subject areas. The researcher analysed the grades of students in both groups in all subjects at the beginning and end of one school term. The results of this analysis may best be examined by means of charts 1-16. On all charts the grade range is E, G, F, U.

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[6] Chicago Publis Schools "Survey of Pupils Whose First Language is One Other Than English," November, 1971.

Chart 1 Movement: Regular Group - Reading

Beginning Grade	Number	Decrease of grade (-2)	Decrease of grade (-1)	No Change	Increase of grade (+1)	Increase of grade (+2)	Increase of grade (+3)	Grade level increase or decrease	Final grade	#
E	3		1	2				-1	E	3
G	5		1	3	1			0	G	4
F	5		1	4				-1	F	5
U	1			1				0	U	2
Total	14		3	10	1			-2		14

Chart 2 Movement: Bilingual Group - Reading

Beginning Grade	Number	Decrease of grade (-2)	Decrease of grade (-1)	No Change	Increase of grade (+1)	Increase of grade (+2)	Increase of grade (+3)	Grade level increase or decrease	Final grade	#
E	1			1				0	E	8
G	13			6	7			+7	G	6
F	0								F	0
U	1			1				0	U	1
Total	15			8	7			+7		15

Charts 1 and 2 describe the progress in reading of the regular and bilingual groups. In the regular groups, a slight over-all decrease (-2) took place between the first and last marking period because of a downward movement on the E and F grade levels. In the bilingual the increase was moderate (+7) because of the upward movement from the G to the E grade level.

Chart 3 **Movement: Regular Group - Math**

Beginning Grade	Number	Decrease of grade (-2)	Decrease of grade (-1)	No Change	Increase of grade (+1)	Increase of grade (+2)	Increase of grade (+3)	Grade level increase or decrease	Final grade	#
E	2		1	1				-1	E	5
G	4		1		3			+2	G	3
F	7		2	2	2	1		+2	F	3
U	1			1				0	U	3
Total	14		4	4	5	1		+3		14

Chart 4 Movement: Bilingual Group - Math

Beginning Grade	Number	Decrease of grade (-2)	Decrease of grade (-1)	No Change	Increase of grade (+1)	Increase of grade (+2)	Increase of grade (+3)	Grade level increase or decrease	Final grade	#
E	4			4				0	E	14
G	9		1		8			+7	G	0
F	1					1		+2	F	1
U	1						1	+3	U	0
Total	15		1	4	8	1		+12		15

Charts 3 and 4 deal with math grades. A slight increase (+3) took place in the regular group explained by upward movement on the F and G grade levels which more than offset the decline on the E level. In the bilingual group, substantial increase (+12) resulted from upward movement on the U, F, and G grade levels.

Chart 5 Movement: Regular Group - Speaking

Beginning Grade	Number	Decrease of grade (-2)	Decrease of grade (-1)	No Change	Increase of grade (+1)	Increase of grade (+2)	Increase of grade (+3)	Grade level increase or decrease	Final grade	#
E	5		3	2				-3	E	4
G	5		1	2	2			+1	G	7
F	3			1	2			+2	F	2
U	1			1				0	U	1
Total	14		4	6	4			0		14

Chart 6 Movement: Regular Group - Speaking

Beginning Grade	Number	Decrease of grade (-2)	Decrease of grade (-1)	No Change	Increase of grade (+1)	Increase of grade (+2)	Increase of grade (+3)	Grade level increase or decrease	Final grade	#
E	2			2				0	E	12
G	8			1	7			+7	G	2
F	5			1	1	3		+7	F	1
U	0								U	0
Total	15			4	8	3		+14		15

Charts 5 and 6 illustrate trends in speaking grades. No over-all movement took place in the regular group as the decrease on the E level was balanced by an increase on the F and G levels. In the bilingual group substantial (+14) progress was made because of increase on the F and G levels.

Chart 7 **Movement:** Regular Group - ~~Speaking~~ Listening

Beginning Grade	Number	Decrease of grade (-2)	Decrease of grade (-1)	No Change	Increase of grade (+1)	Increase of grade (+2)	Increase of grade (+3)	Grade level increase or decrease	Final grade	#
E	5			5				0	E	5
G	4		1	3				-1	G	4
F	5		1	3	1			0	F	4
U	0								U	1
Total	14		2	11	1			-1		14

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Chart 8 Movement: Bilingual Group - Listening

Beginning Grade	Number	Decrease of grade (-2)	Decrease of grade (-1)	No Change	Increase of grade (+1)	Increase of grade (+2)	Increase of grade (+3)	Grade level increase or decrease	Final grade	#
E	2		1	1				-1	E	5
G	10			6	4			+4	G	9
F	2				2			+2	F	1
U	1				1			+1	U	0
Total	15		1		7			+6		15

Charts 7 and 8 describe listening grades. A slight decline (-1) took place in the regular group because of a decrease on the G grade level. In the bilingual group showed a moderate increase (+6) due to improvement on the U, F, and G levels more than compensating for a slight decrease on the E grade level.

Chart 9 Movement: Regular Group - Writing

Beginning Grade	Number	Decrease of grade (-2)	Decrease of grade (-1)	No Change	Increase of grade (+1)	Increase of grade (+2)	Increase of grade (+3)	Grade level increase or decrease	Final grade	#
E	0								E	4
G	2			1	2			+2	G	1
F	7		2	3		2		+2	G	7
U	4				4			+4	U	2
Total	14		2	4	6	2		+8		14

Chart 10 Movement: Regular Group - Writing

Beginning Grade	Number	Decrease of grade (-2)	Decrease of grade (-1)	No Change	Increase of grade (+1)	Increase of grade (+2)	Increase of grade (+3)	Grade level increase or decrease	Final grade	#
E	0								E	9
G	12			4	8			+8	G	5
F	2				1	1		+3	F	0
U	1			1					U	1
Total	15			5	9	1		+11		15

Charts 9 and 10 deal with writing grades. In the regular group a moderate increasc (+8) occurred as a result of improvement at the U, F, and G grade levels. In the bilingual group, the increase was substantial (+11) because of improvement at the F and G grade levels. In the bilingual group, the increase was substantial (+11) because of improvement at the F and G grade levels.

Chart 11 Movement: Regular Group - Spelling

Beginning Grade	Number	Decrease of grade (-2)	Decrease of grade (-1)	No Change	Increase of grade (+1)	Increase of grade (+2)	Increase of grade (+3)	Grade level increase or decrease	Final grade	#
E	7		1	6				-1	E	7
G	4		1	2	1			0	G	4
F	2			1	1			+1	F	2
U	1			1					U	1
Total	14		2	10	2			0		14

Chart 12 Movement: Bilingual Group - Spelling

eginning Grade	Number	Decrease of grade (-2)	Decrease of grade (-1)	No Change	Increase of grade (+1)	Increase of grade (+2)	Increase of grade (+3)	Grade level increase or decrease	Final grade	f
E	2			2				0	E	8
G	9			4	5			+5	G	6
F	4			1	2	1		+4	F	1
U	0								U	0
Total	15			7	7	1		+9		15

Charts 11 and 12 illustrate trends in spelling grades. No overall movement took place in the regular group as a decline on the E level was exactly balanced by a rise on the F level. In the bilingual group moderate (+9) movement resulted from increases on the F and G grade levels.

Chart 13 Movement: Regular Group - Science

Beginning Grade	Number	Decrease of grade (-2)	Decrease of grade (-1)	No Change	Increase of grade (+1)	Increase of grade (+2)	Increase of grade (+3)	Grade level increase or decrease	Final grade	#
E	3			3				0	E	3
G	9			9				0	G	9
F	1			1				0	F	2
U	1				1			+1	U	0
Total	14			13	1			+1		14

Chart 14 Movement: Bilingual Group - Science

Beginning Grade	Number	Decrease of grade (-2)	Decrease of grade (-1)	No Change	Increase of grade (+1)	Increase of grade (+2)	Increase of grade (+3)	Grade level increase or decrease	Final grade	#
E	0								E	9
G	14			5	9			+9	G	5
F	1								F	1
U	0								U	0
Total	15			6	9			+9		15

Charts 13 and 14 deal with science grades. The regular group exhibited a slight (+1) increase based on improvement on the U grade level. In the bilingual group a moderate (+9) increase took place because of the upward movement from the G to the E grade level.

Chart 15 Movement: Regular Group - Social Studies

Beginning Grade	Number	Decrease of grade (-2)	Decrease of grade (-1)	No Change	Increase of grade (+1)	Increase of grade (+2)	Increase of grade (+3)	Grade level increase or decrease	Final grade	#
E	2		1	1				-1	E	3
G	8		4	2	2			-2	G	4
F	3			2	1			+1	F	6
U	1			1					U	1
Total	14		5	6	3			-2		14

Chart 16 Movement: Bilingual Group - Social Studies

ginning Grade	Number	Decrease of grade (-2)	Decrease of grade (-1)	No Change	Increase of grade (+1)	Increase of grade (+2)	Increase of grade (+3)	Grade level increase or decrease	Final grade	#
E	2			2				0	E	10
G	12			4	8			+8	G	4
F	1			1				0	F	1
U	0								U	0
Total	15			7	8			+8		15

Charts 15 and 16 illustrate social science grades. A slight decrease (-2) resulted in the regular group from declines on the E and G grade levels which were not completely offset by improvement on the F level. In the bilingual group moderate (+8) improvement was found as a result of movement from the G to the E grade level.

In the regular group slight or moderate over-all grade increases took place in three subjects, no change occurred in two subjects, and slight decreases resulted in three subjects. In the bilingual group, grades improved moderately to substantially in all eight subjects. Nevertheless, it is still necessary to compare the regular and bilingual groups to ascertain the levels on which each began and ended the term in all subjects. This information may be found

on Chart 17.

Chart 17 - Comparison of Means

Subject		Beginning	Final	Difference
Reading	Regular	2.71	2.57	-.14
	Bilingual	2.93	3.40	+.47
Math	Regular	2.57	2.71	+.14
	Bilingual	3.06	3.87	+.81
Speaking	Regular	3.00	3.00	.00
	Bilingual	2.80	3.73	+.93
Listening	Regular	3.00	2.92	-.08
	Bilingual	2.86	3.27	+.41
Writing	Regular	2.00	2.50	+.50
	Bilingual	2.73	3.47	+.74
Spelling	Regular	3.21	3.21	.00
	Bilingual	2.86	3.47	+.61
Science	Regular	3.00	3.07	+.07
	Bilingual	2.93	3.53	+.60
Social Studies	Regular	2.78	2.64	-.14
	Bilingual	3.06	3.60	+.54

In four subjects (speaking, listening, spelling, and science), the mean grade of the regular group was higher at the beginning of the term. However, by the end of the term, the mean grade of the bilingual group exceeded that of the regular group ~~when in those three subjects in which the mean of the regular group also increased.~~ in these same subjects.

The distribution around these means of both the regular and bilingual groups affords another perspective on their comparative progress. This material may best be examined by means of Charts 18-33.

Chart 18 Regular Group - Reading

	-4	-3	-2	-1	0	1	2	3	4
Beginning	0	0	1	5	5	3	0	0	0
Final	0	0	0	2	5	4	3	0	0

n=14

Chart 18 indicated that in reading only three members of the regular group were graded above the mean at the beginning of the term. By the end of the term, the mean fell slightly but half the students had grades one or more standard deviations above the mean.

Chart 19 Bilingual Group - Reading

	-4	-3	-2	-1	0	1	2	3	4	
Beginning	0	1	0	0	13	1	0	0	0	
Final	0	0	1	0	5	9	0	0	0	

n=15

Chart 19 indicates that all but one member of the group was graded at or above the mean in reading at the beginning of the term. Not only did the mean increase, by the end of the term, but although one member of the group still fell below the mean, eight of those formerly at the mean, improved to one standard deviation above.

Chart 20 Regular Group - Math

	-4	-3	-2	-1	0	1	2	3	4
Beginning	0	0	0	0	8	4	2	0	0
Final	0	0	2	4	4	4	0	0	0

n=14

Chart 20 shows that at the beginning of the term, no student in the regular group was graded below the mean in math. By the end of the term, the mean increased slightly but a general downward trend brought six students one or more standard deviations below the mean.

Chart 21 Bilingual Group - Math

	-4	-3	-2	-1	0	1	2	3	4
Beginning	0	1	0	1	9	4	0	0	0
Final	0	1	0	0	14	0	0	0	0

n=15

Chart 21 shows that two students were below and four above the mean at the beginning of the term. The mean rose considerably by the end of the term with an accompnying concentration around the mean and no student above.

Chart 22 Regular Group - Speaking

	-4	-3	-2	-1	0	1	2	3	4
Beginning	0	0	1	3	5	5	0	0	0
Final	0	0	1	2	7	4	0	0	0

n=14

Chart 22 illustrates that in speaking, the regular group had four students below and five students above the mean. The mean remained the same with one student from each group joining the cluster around the mean.

Chart 23 Bilingual Group - Speaking

	-4	-3	-2	-1	0	1	2	3	4
Beginning	0	0	0	5	8	2	0	0	0
Final	0	0	1	2	12	0	0	0	0

n=15

Chart 23 illustrates that in speaking, the bilingual group began with five students below and only two above the mean. The mean increased substantially and added two students from each group to the concentration around the mean.

Chart 24 Regular Group - Listening

	-4	-3	-2	-1	0	1	2	3	4
Beginning	0	0	0	5	4	5	0	0	0
Final	0	0	1	4	4	5	0	0	0

n=14

Chart 24 indicates that both at the beginning and end of the term, five students in the regular group were above , and five below the mean (with the mean falling slightly) in listening.

Chart 25 Bilingual Group - Listening

	-4	-3	-2	-1	0	1	2	3	4
Beginning	0	1	0	2	10	0	2	0	0
Final	0	0	1	0	9	5	0	0	0

n=15

Chart 25 indicates that in listening, two bilingual students fell below the mean and two above. The mean rose moderately; only one student remained below the mean; and although five students were above the mean, the two students originally 2 standard deviations above the mean, fell one full deviation.

Chart 26 Regular Group - Writing

	-4	-3	-2	-1	0	1	2	3	4
Beginning	0	0	0	3	8	3	0	0	0
Final	0	0	0	2	8	0	4	0	0

n=14

Chart 26 shows that in writing, three students in the regular group were above and three were below the mean at the beginning of the term. The mean increased moderately and four students were graded 2 standard dev - iations above the mean.

Chart 27 Bilingual Group - Writing

	-4	-3	-2	-1	0	1	2	3	4
Beginning	0	1	0	2	12	0	0	0	0
Final	0	1	0	0	5	9	0	0	0

n=15

Chart 27 shows that in writing, one member was below and no member of the bilingual group was above the mean at the beginning of the term. By the end of the term, the mean increased substantially and although the one student failed to improve, none students had exceeded the mean by 1 standard

Chart 28 Regular Group - Spelling

	-4	-3	-2	-1	0	1	2	3	4
Beginning	0	0	1	2	3	8	0	0	0
Final	0	0	1	2	4	7	0	0	0

n=14

Chart 28 illustrates that three students in the regular group were below and eight were above the mean in spelling. The mean remained stable and one student fell to the mean by the end of the term.

Chart 29 Bilingual Group - Spelling

	-4	-3	-2	-1	0	1	2	3	4
Beginning	0	0	0	4	9	0	2	0	0
Final	0	0	0	1	6	8	0	0	0

n=15

Chart 29 illustrates that in the bilingual group, four students were below and two students were above the mean in spelling. The mean increased substatially by the end of the term, with only one student below the mean and eight above (but no longer by 2 standard deviations).

Chart 30 Regular Group - Science

	-4	-3	-2	-1	0	1	2	3	4
Beginning	0	0	1	1	9	3	0	0	0
Final	0	0	0	2	10	0	2	0	0

n=14

Chart 30 indicates that in the regular group, two students were below and three were above the mean in science at the beginning of the term. The mean increased slightly with two below and only two above the mean, but at 2 rather than only 1 standard deviation above.

Chart 31 Bilingual Group - Science

	-4	-3	-2	-1	0	1	2	3	4
Beginning	1	0	0	0	14	0	2	0	0
Final	0	0	0	1	5	9	0	0	0

n=15

Chart 31 indicates that in science, in the bilingual group, one student was far (-4) below and two students were 2 standard deviations above the mean. The mean increased substantially by the end of the term, with one student still below the mean (but only by 1 standard deviation) and nine above the mean (all by 1 standard deviation).

Chart 32 Regular Group - Social Studies

	-4	-3	-2	-1	0	1	2	3	4
Beginning	0	0	0	1	3	8	2	0	0
Final	0	0	1	6	4	3	0	0	0

n=14

Chart 32 shows that in social studies, the regular group had one student below, and ten above the mean at the beginnning of the term. The mean fell slightly accompanied by a general decline to seven students below the mean and only three above.

Chart 33 Bilingual Group - Social Studies

	-4	-3	-2	-1	0	1	2	3	4
Beginning	0	0	1	0	12	0	2	0	0
Final	0	0	0	1	4	10	0	0	0

n=15

Chart 33 shows that in social studies, the bilingual group had one student below and two were 2 standard deviations above the mean at the beginning of the term. The mean increased moderately; the one student improved but still remained below the mean; ten students were above the mean (although only by 1 standard deviation).

Conclusions

Whether using raw grades (Charts 1-16) or deviations from the mean (Charts 18-33), it is clear that the grades of pupils in the bilingual group improved to a greater degree than the grades of pupils in the

regular group in every subject area. This difference cannot be explained by teacher personality because, in every subject area, the same teacher taught both the regular and bilingual groups.

It seems obvious that the greater use of Spanish in the bilingual groups avoided the language problem which generally interferes with the scholastic achievement of Mexican-American pupils. One might extrapolate from the data that even Mexican-American children with an apparently "good" grasp of English might benefit from a greater use of Spanish in their classrooms - as much for scholastic as for psychological reasons. It is impossible to generalize from a sample of this small size but one might well hypothesize that bilingual programs are sorely needed in schools with significant numbers of Spanish-American pupils.